UNCLASSIFIED CONFIDENTIAL SECRET

ROUTING AND RECORD SHEET

INSTRUCTIONS: Officer designations should be used in the "TO" column. Under each comment a line should be drawn across sheet and each comment numbered to correspond with the number in the "TO" column. Each officer should initial (check mark insufficient) before further routing. This Routing and Record Sheet should be returned to Registry.

FROM: Chief, R&D-EP

TELEPHONE NO.

25X1

DATE 10 November 1955

TO	ROOM NO.	DATE REC'D	DATE FWD'D	OFFICER'S INITIALS	TELEPHONE	COMMENTS
1. Chief, R&D Lab		11-15	11-15	[illegible]		The question here appears to concern the minimum voltage levels, forward and reverse, at which a diode will still act as a diode. Suggest you give this some thought, and if necessary conduct a quick test to get experimental evidence. Also suggest this "project" carry the same priority as the video amplifier. [illegible] 11-15-55
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FORM NO. 1 APR 55 610 REPLACES FORM 51-10 WHICH MAY BE USED.

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Office Memorandum • UNITED STATES GOVERNMENT

TO : Chief, R&D Lab

DATE: 10 November 1955

FROM : Chief, R&D-EP

SUBJECT: Pulse Stretcher Comparison

1. A question which frequently arises is that concerning whether or not a pulse stretcher, as contained in the attached drawing, can be used immediately following a video detector. No authoritative guidance exists on this question although normal practices employ (N)-video amplifier stages prior to a pulse stretcher.

2. It would appear that a limiting factor evolves around whether or not sufficient energy exists at the crystal detector output to permit the pulse stretcher being charged. This in turn should indicate its usability as based upon signal level required as well as conditions of pulse width versus pulse repetition rates.

3. If sufficient energy is found to exist for the pulse stretcher to operate under this condition, a possibility exists whereby a reduction of amplifier band widths may be possible. This would also open up additional possibilities such as the employment of the Hughes high back resistance very low impedance diodes in lieu of the indicated IN52's. Still another possibility might be the "stretching" of pulses simply by increasing the time constant of the detector load circuit. It is probable, however, that the ratio of charge time to discharge time in this circuit would be too large to be practical for short pulses.

4. We will appreciate any comments and suggestions you have to offer in connection with this problem, together with any empirical data you may obtain. (Rough draft is fine).

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Attachment: Drawing of Pulse Stretcher

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